

IN THE CLAIMS

Please cancel claims 1-3, 8-10, 26, 27, 31, 32, 35, 36, 38 and 39, all previously withdrawn from consideration.

In the claims remaining under consideration, please cancel claims 50 and 52-59 and amend claims 15 and 46 as follows:

15. A carpet backing consisting of a nonwoven adhesive fabric needled or thermally bonded to a supporting fabric, wherein the nonwoven adhesive fabric is a self-bonded or spunbonded nonwoven fabric comprising continuous filaments of a thermoplastic resin and the supporting fabric is a tuftable woven primary backing fabric comprising thermoplastic warp and weft yarns having substantially rectangular cross-sections, or an open weave secondary backing fabric comprising thermoplastic warp yarns with a substantially rectangular cross-section woven in a leno weave with thermoplastic weft yarns that are spun yarns or yarns having a substantially rectangular cross-section.

46. A secondary carpet backing according to Claim 15 in which the supporting fabric is an open weave secondary carpet backing fabric comprising thermoplastic warp yarns with a substantially rectangular cross-section woven in a leno weave with thermoplastic weft yarns that are spun yarns or yarns having a substantially rectangular cross-section.

REMARKS

At the outset, Applicants note with appreciation that the rejections in the prior office action based on 35 USC 112 and on the Kimmel reference under 35 USC 102 have been withdrawn.

Claims 50 and 52-59 are being cancelled according to the amendment presented herein, thereby mooting the two separate anticipation rejections of claims 52, 54 and 55 according to paragraphs 5 and 6 of the final rejection and the obviousness rejection of claims 56-59 according to paragraph 8 of the action.

Independent claim 15 has been amended to recite that the claimed backings consist of, instead of comprise, the supporting and nonwoven fabrics recited therein. Claims 15 and 46 have been amended to incorporate the limitation from claim 50 that the open weave secondary backing supporting fabric has a leno weave. These amendments are supported in the specification and do not add new matter.

Those of the rejections applicable to the claims not canceled according to the foregoing amendments are discussed below, using headings corresponding to those in the final rejection. Rejections that will be moot on entry of the amendments presented herein are not discussed; however, failure in this response to address specific aspects, positions or arguments included in the mooted rejections is not an admission as to any such aspect, position or argument or an acknowledgement of Applicants' agreement therewith.

Claim Rejections - 35 USC 102

Claims 15, 16, 40-43, 45, 46 and 52-55 stand finally rejected as anticipated by US 4,242,394 (Lieb), which is cited for its disclosure of primary backings for tufted pile fabrics having a nonwoven staple fiber layer, a reinforcing layer and a woven backing, and in which the reinforcing layer can be a spunbonded fabric with thermally bonded continuous filaments and the staple fiber layer is needled through the reinforcing layer to the woven fabric.

This rejection is moot as to claims 52-55, and reconsideration is requested as to claims 15, 16, 40-43, 45 and 46 in view of the amendments presented herein and the following discussion.

None of claims 15, 16, 40-43, 45 and 46 is anticipated by Lieb because independent claim 15, as amended herein, and its dependent claims, including claims 16, 40-43, 45 and 46, are limited to backings with a woven fabric layer and a nonwoven, continuous filament spunbonded or self-bonded fabric but free of a staple fiber layer. Lieb requires that staple fibers be included in his backings as a capping layer and that the layer be needled to a woven fabric through a reinforcing layer. This is not, and does not anticipate, the claimed backings.

Claim 46, which recites that its supporting fabric is an open weave secondary backing fabric with a leno weave, is not anticipated by Lieb for the additional reasons that the reference does not disclose secondary backing fabrics or open or leno weaves for the woven fabric layer of its backings.

Claim Rejections - 35 USC 103

Claims 47-50 and 56-59 have been rejected as obvious from Lieb in view of US 4,138,519 (Mitchell). Lieb appears to be relied on as in the anticipation rejection discussed above, and Mitchell as a teaching that fabrics with a leno weave are known as secondary backings.

The rejection being moot as to claims 50 and 56-59, reconsideration is requested as to claims 47-49.

Claims 47-49 claim secondary backings consisting of an open, leno weave woven fabric and a continuous filament spunbonded or self bonded nonwoven fabric. As discussed above in connection with the anticipation rejection, claim 15 and its dependent claims, which

include claims 47-49, differ from Lieb because the reference requires a layer of staple fibers needled to a woven component through a reinforcing layer. Neither the staple fiber layer nor its needling through a reinforcing layer is included in the backings of claims 47-49.

In addition, Lieb's backings are primary backings for tufting with face yarn, not open, leno weave secondary backing fabrics as in claims 47-49. This is seen throughout Lieb, for example at Col. 1 l. 21-22, stating that the invention provides a reinforced primary backing "for tufting," and at Col. 1 l. 41-55, describing tufted pile fabrics having a reinforced primary backing with "yarn tufted through said reinforced primary backing ...". Lieb even emphasizes as an advantage of his invention that tufted fabrics prepared from the backings do not need a secondary backing (e.g., Col. 1 l. 21-27; Col. 2 l. 5-13). Also, in Lieb's Example, Col. 3 l. 6-10 describes a reinforced backing in which a "leno weave scrim" was used as a reinforcing layer and a ribbon scrim "woven backing" was used as the woven backing layer.

Lieb's express characterization that his backings are for tufting would be understood by persons skilled in the carpet backing and tufting arts as calling for a closed weave, tuftable woven fabric as the woven component of the reference's backings, not an open, or leno weave construction as in secondary backings according to claims 47-49. As is well known to persons skilled in the art, open weave fabrics are ill suited as backings for tufting because openings in the weave do not provide backing fabric surface for holding yarn tufts, and tuftability of open, leno weave fabrics, in which warp tapes or ribbons twist around weft yarns, suffers still further because the twisted warps present surfaces that deflect needles during tufting. This knowledge is

reflected in the distinction drawn in the description of the leno weave scrim reinforcing layer and woven scrim backing layer in Lieb's example.

Lieb's primary backings, with their needled staple fiber layer and requirement for tuftability, are not, and do not suggest or make obvious, the claimed secondary backings with their open, leno weave supporting fabrics and a self bonded or spunbonded continuous filament nonwoven needled or thermally bonded thereto. Mitchell's teaching of leno weave fabrics and leno constructions as secondary backings, noted by the Examiner in paragraph 8 of the final rejection, does not supplement what is taught and would fairly be understood from Lieb in such a way as to make claims 47-49 obvious. Rather, in the context of Lieb's primary backings, Mitchell's teachings concerning secondary backings are irrelevant.

In view of the foregoing, claims 47-49 are not obvious from Lieb in view of Mitchell.

Finally, claims 44 and 51 have been finally rejected as obvious from Lieb in view of US 4,069,361 (Kumar). Reconsideration is requested.

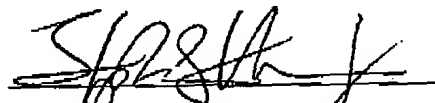
Kumar discloses dimensionally stable tuftable backings with resistance to bow and skew. The backings have a woven primary backing fabric needled with a layer of staple fibers. The staple fibers are fused by heating, or with a solvent, to bond the fibers without fusing the woven backing (Col. 2 l. 6-16). Kumar discloses that the "staple fiber may be composed of polymer that melts at temperatures below which the yarn of the woven fabric melts" (Col. 2 l. 16-18) and reports examples in which fused polypropylene staple fiber needled to polypropylene woven backings were made using equipment heated at 156°C and fused copolyester staple fiber needled to a polypropylene woven backing was made

using equipment heated at 143°C. Polypropylene's melting point is well known to be about 168°C and, accordingly, heating temperatures suitable for Kumar's purposes according to its examples are about 12°C and 25°C below the woven fabric melting point. Those temperature differences are both less than and greater than the 20°C differential recited in claims 44 and 51. While the final rejection notes that fusible fibers melting below the substrates to which they are to be fused are known, the cited references do not support the instant obviousness rejection of claims 44 and 51. Lieb is silent concerning temperature differences, as acknowledged in the final rejection, and Kumar teaches temperatures within and outside the claimed temperatures without basis to select between them. Taken together, the references fail to make claims 44 and 51 obvious.

Conclusion

In view of the amendments and reasons for reconsideration of the rejections presented herein, it is submitted that the final rejection is not warranted, and that the claims are patentable and the application is otherwise in condition for allowance. Allowance of the application is, therefore, respectfully requested.

Respectfully submitted,



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Amended Claims with Additions Underlined and Deletions
Bracketed

15. (twice amended) A carpet backing [comprising] consisting of a nonwoven adhesive fabric needled or thermally bonded to a supporting fabric, wherein the nonwoven adhesive fabric is a self-bonded or spunbonded nonwoven fabric comprising continuous filaments of a thermoplastic resin and the supporting fabric is a tuftable woven primary backing fabric comprising thermoplastic warp and weft yarns having substantially rectangular cross-sections, or an open weave secondary backing fabric comprising thermoplastic warp yarns with a substantially rectangular cross-section [and] woven in a leno weave with thermoplastic weft yarns that are spun yarns or yarns having a substantially rectangular cross-section.

46. (amended) A secondary carpet backing according to Claim 15 in which the supporting fabric is an open weave secondary carpet backing fabric comprising thermoplastic warp yarns with a substantially rectangular cross-section [and] woven in a leno weave with thermoplastic weft yarns that are spun yarns or yarns having a substantially rectangular cross-section.